

FACULTAD DE INGENIERÍA

Escuela Académico Profesional de Ingeniería de Sistemas e Informática

Tesis

**Development of a Web Application for the Control of
Human Rabies in Peru**

Percy Jesus Aza Yanque
Manuel Gonzalo Paz Carpio
Cristian Junior Elguera Arenas
Wilver Auccahuasi Aiquipa

Para optar el Título Profesional de
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Yo: MANUEL GONZALO PAZ CARPIO, con Documento nacional de identidad (DNI) N° 29734011; teléfono 914384669; estudiante de la Escuela Académico Profesional de Ingeniería de Sistemas e Informática.

Yo: CRISTIAN JUNIOR ELGUERA ARENAS, con Documento nacional de identidad (DNI) N° 47935376; teléfono 992793809; estudiante de la Escuela Académico Profesional de Ingeniería de Sistemas e Informática.

Yo: WILVER AUCCAHUASI AIQUIPA, con Documento nacional de identidad (DNI) N° 43375865; teléfono 971006824; Docente de la Escuela Académico Profesional de Ingeniería de Sistemas e Informática.

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Percy Jesus, Aza Yanque
Universidad Continental, Huancayo, Lima, Perú
29288608@continental.edu.pe

Cristian Junior, Elguera Arenas
Universidad Continental, Huancayo, Lima, Perú
47935376@continental.edu.pe

Manuel Gonzalo, Paz Carpio
Universidad Continental, Huancayo, Lima, Perú
29734011@continental.edu.pe

Wilver Auccahuasi
Universidad Continental, Huancayo, Lima, Perú
wauccahuasi@continental.edu.pe

ABSTRACT

Abstract: With the advance of Information and Communication Technologies, different processes are being improved so that they can be optimized and reliable information can be obtained to make the best decisions. Therefore, in the process of human rabies control in Peru, it is very important to have a record of the vaccines that must be completed according to the vaccination schedule assigned to the patient. The stored information should be accessible to the health personnel in charge of patient care in any of the micro-networks. In this work, a web application called "Rabies Vaccine" was developed with the aim of controlling the vaccination of patients who have been bitten by an animal that transmits rabies, for this purpose a record of the patient will be made and, if necessary, the health personnel will assign a vaccination schedule that the patient must comply with. The developed prototype of the web application was implemented in the Miraflores Health Center of the Edificadores Misti Micro-Network, which belongs to the Arequipa - Caylloma Health Network, located in the district of Miraflores, Arequipa, Peru, in order to improve vaccination control. Finally, the results of the performance tests that were used to measure the influence of the web application will be shown. For these tests, observation sheets were used where records of before and after the web application was used were kept and they were called "Pre-test" and "Post-test". This web application has more secure and reliable data, it is scalable so that it can be used by other health centers and easy to access with only internet access.

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KEYWORDS

Web application, Vaccination Registry, Technologies, Health

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1 INTRODUCTION

Rabies is a zoonosis transmitted from animals to humans by inoculation of the rabies virus contained in the saliva of infected animals and most cases are transmitted through bites [1]. Reviewing the literature, we found works related to the registration of the various vaccines presented in the national system, as well as the solutions presented in the context of the Covid-19 vaccine, we found works related to the control of vaccines in children under 5 years of age in Peru, which corresponds to the state health system [2].

In times of pandemics, many solutions have been presented trying to keep track and record vaccines, we find those using the NFC communication protocol [3]. Solutions have also been presented using other communication protocols such as RFID and those that work together RFID and NFC, for the registration of vaccines by Covid-19 [4]. For these solutions to be configured, it is necessary to consider technical considerations of communication between devices through configuration mechanisms such as configurations for communication between RFID devices using IoT techniques [5].

In the field of health there are many solutions such as systems to improve the process of care for patients who are hospitalized in health centers, through the use and exploitation of IoT protocols [6]. We also find solutions using wireless communication techniques and protocols, as in the case of the transmission of brain signals with BCI equipment [7]. In the same line of the use of IoT techniques in the development of health solutions, we find works related to the monitoring of muscle activity to record and monitor muscle recovery processes [8]. Not only these solutions work with the sending and transmission of signals but also in the sending of images and videos in muscle recovery processes [9].

In the design of information systems, we have features that make possible the management of information security, both to ensure the integrity and to keep safe the data that are worked in the use and exploitation of these systems, standards must be managed to ensure the integral security of these systems [11]. In the same way, the issue of intuitive handling by users is recommended, always maintaining usability, which ensures the management and operation of the

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